

A NEW SPECIES OF THE GENUS *PEDOPODISMA* ZHENG FROM SICHUAN PROVINCE, CHINA (ORTHOPTERA, ACRIDOIDEA, CATANTOPIDAE)

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Abstract A new species, *Pedopodisma abaensis* sp. nov., found in Aba of Sichuan is described in this paper. The new species is allied to *P. shennongjiaensis* Wang et Li, 1996, but differs from the latter by: body small in size, length of body ♂ 12.1–12.5 mm, ♀ 16.5–19.2 mm; length of a segment in the middle of antennae is about 2.0 times of width; epiproct with longitudinal groove on basal half, the width of groove averagely; apex of subgenital plate blunt in male and ovipositor valve narrower, length of upper valve is 3.0 times its width. The type specimens are deposited in the College of Plant Protection, Shandong Agricultural University, Taian, Shandong.

Key words Orthoptera, Acridoidea, Catantopidae, *Pedopodisma*, new species, China.

The genus *Pedopodisma* Zheng, 1980 belonging to the Podisminae of Catantopidae of Acridoidea includes 13 species, distributed in Sichuan, Chongqing, Hunan, Hubei, Henan, Shaanxi, Gansu, Anhui and Zhejiang (Zheng, 1980; Zheng, 1974; Yin, 1980; Huang, 1988; Zhang, 1994; Zheng et al., 1995; Fu et al., 1996; He, 1999; Wang, 1996; Zheng, 2000; Zheng, 2004; Zhong, 2004; Zheng et al., 2005; Zheng et al., 2006). During the identification of grasshopper specimens collected from Sichuan, China in 2011, a new species, *Pedopodisma abaensis* sp. nov. is found and is described below. The type specimens are deposited in the College of Plant Protection, Shandong Agricultural University, Taian, Shandong.

Pedopodisma abaensis sp. nov. (Figs 1–7)

Male (Figs 1–4). Body small in size. Head shorter than pronotum. Front oblique. Frontal ridge with longitudinal groove entirely, both sides parallel. Vertex broad, flat, the widest wider than width of front ridge between antennae. Antennae slender, reaching the base of hind femur, length of a segment in the middle of antennae is about 2.0 times of width. Eyes large, circular nearly, prominent, vertical diameter is 1.3 times horizontal diameter, and 2 times length of subocular groove. Median keel distinct in prozone and lower in metazone, lateral carinae absent, median keel cut by hind transverse sulcus, prozone is 2.5 times metazone in length, hind margin incised in the middle. Tegmina small, not reaching the hind margin of mesonotum, apex acuter. Wings absent. Prosternal process conical, apex acute, oblique backward. Length of interspace of mesosternum 1.5

times its narrowest. Upper keel of hind femur smooth, genicular lobe rounded at the end. Hind tibiae with 9 spines on the outer side and 10 spines on the inner side, outer apical spine absent. Arolium of tarsus very large, surpassing the apex of claws. Tympanic cavity circular nearly. Epiproct triangular, basal half with longitudinal groove, width of groove average, apical part without two short longitudinal carinae on both sides. Furcula very small. Cercus curved inward, basal part widened distinctly. Subgenital plate short conical, apex blunt. Epiphallus (Fig. 3).

Female (Figs 5–7). Body larger than male. Antennae short, extending over the hind margin of pronotum. Eye smaller, oval circle, vertical diameter is 1.4 times length of subocular groove. Prozone is 2.3 times metazone in length. Epiproct triangular, with big points sparsely, length larger than the widest at the base, longitudinal groove light. Cercus short conical, not reaching the apex of epiproct. Ovipositor valve narrower, length of upper valve is 3.0 times its width, upper ovipositor valve with blunt teeth on outer side. Subgenital plate short and broad, with triangular prominent in the middle.

Coloration. Body yellowish-brown. Postocular band black, reaching third abdominal segment. Lower half of pronotum yellowish-green on lateral side. Tegmen brown. Fore and middle legs yellowish-green. Hind femur yellowish-orange, sometimes yellowish-green, knee black. Hind tibia yellowish-green, its base black.

Length of body: ♂ 12.1–12.5 mm, ♀ 16.5–

This research was supported by the National Natural Science Foundation of China (31272293).

Received 20 Oct. 2012, accepted 24 Sep. 2012.



Figs 1–7. *Pedopodisma abaensis* sp. nov. 1–4. ♂. 5–7. ♀. 1, 5. Body. 2, 4. End of abdomen. 3. Epiphallus. 6. Head and pronotum. 7. Ovipositor valves. 1–2, 5. Dorsal view. 4, 6–7. Lateral view.

Table 1. Comparison of *Pedopodisma abaensis* sp. nov. and *Pedopodisma shennongjiaensis* Wang et Li, 1996.

Characters	<i>Pedopodisma abaensis</i> sp. nov.	<i>Pedopodisma shennongjiaensis</i> Wang et Li, 1996
Body size	Length of body: ♂ 12.1 – 12.5 mm, ♀ 16.5 – 19.2 mm	Length of body: ♂ 21.5 – 22.0 mm, ♀ 26.3 – 27.0 mm
Antennae	Length of a segment in the middle is about 2.0 times width	Length of a segment in the middle is about 2.5 times width
Epiproct	The width of longitudinal groove averagely, apical part without two short longitudinal carinae on both sides	The longitudinal groove widened at end, apical part with two short longitudinal carinae on both sides
Subgenital plate of male	Apex blunt	Apex slender
Ovipositor valve	Narrower, length of upper valve is 3.0 times its width	Wider, length of upper valve is 2.5 times its width

19.2 mm. Length of pronotum: ♂ 3.5 – 4.0 mm, ♀ 4.2 – 4.8 mm. Length of hind femur: ♂ 8.8 – 9.2 mm, ♀ 11.5 – 13.2 mm.

Holotype ♂; paratypes: 1 ♂, 2 ♀♀, Aba, Sichuan (32°54'N, 101°44'E; alt. 3 300 m), 2011-08-24, collected by ZHENG Fang-Qiang and YE Bao-Hua.

The new species is allied to *P. shennongjiaensis*

Wang et Li, 1996. The major differences are listed in Table 1.

Etymology. The specific epithet is named for Aba, the type locality.

REFERENCES

- Eades, D. C., Otte, D., Cigliano, M. M. and Braun, H. 2011. Orthoptera Species File Online. Version 2.0/4.0. < [http:// Orthoptera. SpeciesFile. org](http://Orthoptera.SpeciesFile.org) >

- Fu, P and Zheng, Z-M 1996. A new species of the genus *Pedopodisma* Zheng, 1980 from Wuling Mountains of Hunan, China (Orthoptera, Catantopidae). *Acta Zootaxonomica Sinica*, 21 (2): 202–204. [动物分类学报]
- He, T-L, Mu, F-H and Wang, Y-W 1999. A new species of the genus *Pedopodisma* Zheng, 1980 from Zhejiang. *Entomotaxonomia*, 21 (1): 22–24.
- Li, H-C, Xia, K-L, Bi, D-Y, Jin, X-B, Huang, C-M, Yin, X-C, Zheng, Z-M, Lian, Z-M, You, Q-J, Zhang, F-L and Li, T-S 2006. Fauna Sinica, Insecta: Orthoptera, Acridoidea, Catantopidae. Science Press, Beijing. 43: 366.
- Wang, Y-W and Li, X-D 1996. A new species of grasshopper from Shennongjia, Hubei Province. *Acta Entomologica Sinica*, 39 (1): 73–75.
- Huang, C-M 1988. Two new species of the genus *Pedopodisma* Zheng, 1980 (Orthoptera: Catantopinae). *Acta Entomologica Sinica*, 31 (1): 73–75.
- Yin, X-C 1980. Notes on two new species of grasshoppers from Emeishan of Sichuan Province. *Entomotaxonomia*, 2 (3): 229–232.
- Yin, X-C, Shi, J-P and Yin, Z 1996. A Synonymic Catalogue of Grasshoppers and Their Allies of the World. China Forestry Publishing House, Beijing. pp. 531.
- Zhang, X-J 1994. The Grasshoppers of Podismana and Coryphiminae with Two New Species (Orthoptera: Catantopidae). In: Shen, X-C and Shi, Z-Y (eds.), Study on the Taxonomy and Fauna of Insect from Henan (Vol. 1). China Agricultural Science Press, Beijing. 8–12.
- Zheng, Z-M 1974. A new species of *Sinopodisma* Chang and description of the male of *Chorthippus louguanensis* Cheng et Tu (Orthoptera: Acrididae). *Acta Entomologica Sinica*, 17 (1): 97–101.
- Zheng, Z-M 1980. New genus and new species of grasshoppers from Sichuan, Shaanxi and Yunnan. *Entomotaxonomia*, 2 (4): 347.
- Zheng, Z-M 1985. The Grasshopper Fauna of Yunnan, Guizhou, Sichuan, Shaanxi and Ningxia. Science Press, Beijing. pp. 160.
- Zheng, Z-M and Chen, J 1995. A new species of the genus *Pedopodisma* Zheng, 1980 from Sichuan Province (Orthoptera: Acridoidea: Catantopidae). *Entomotaxonomia*, 17 (4): 259–261.
- Zheng, Z-M and Ho, K-K 2000. Study on the genus *Pedopodisma* Zheng, 1980 from China (Orthoptera: Acridoidea, Catantopidae). In: Zhang, Y-L (ed.), Study on the Taxonomy and Fauna of Insect. China Agricultural Press, Beijing. 7–12.
- Zheng, Z-M and Ren, G-D 2005. A new species of the genus *Pedopodisma* Zheng, 1980 from Guizhou Province. *Journal of Shaanxi Normal University (Natural Science Edition)*, 33 (1): 92–94.
- Zheng, Z-M and Shi, F-M 2006. In: Jin, D and Li, Z-Z (ed.), Insects from Chishui Spinulose Tree Fern Landscape. In Chinese. pp. 94–95 [English pp. 97].
- Zheng, Z-M, Li, K and Wang, Q 2004. Descriptions of one new genus and two new species of Orthoptera from Xizang. *Acta Zootaxonomica Sinica*, 29 (1): 110–114. [动物分类学报]
- Zhong, Y-L and Zheng, Z-M 2004. New genus and new species of Catantopidae (Orthoptera) from Hubei Province. *Acta Zootaxonomica Sinica*, 29 (1): 96–100. [动物分类学报]

中国四川省小蹦蝗属一新种 (直翅目, 蝗总科, 斑腿蝗科)

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摘要 记述采自中国四川省斑腿蝗科秃蝗亚科小蹦蝗属 *Pedopodisma* Zheng, 1980 的 1 新种, 阿坝小蹦蝗 *Pedopodisma abaensis* sp. nov.。新种同神农架小蹦蝗 *Pedopodisma shennongjiaensis* Wang et Li, 1996 近似, 其区别特征为: 体较小, 体长♂ 12.1~12.5 mm, ♀ 16.5~19.2 mm; 触角中段一节长为宽的 2.0 倍; 雄性肛上板基部纵沟宽度一致, 端部两侧缺纵脊; 雌性下生殖板顶端较粗; 雌性产卵瓣较狭, 上产卵瓣长

为宽的 3.0 倍。模式标本保存于山东农业大学植物保护学院, 泰安。

阿坝小蹦蝗, 新种 *Pedopodisma abaensis* sp. nov. (图 1~7)

正模♂。副模: 1♂, 2♀♀, 四川阿坝 (32°54'N, 101°44'E; 海拔 3 300 m), 2011-08-24, 郑方强、叶保华采。

词源: 新种种名源自模式标本产地地名。

关键词 直翅目, 蝗总科, 斑腿蝗科, 小蹦蝗属, 新种, 四川。
中图分类号 Q969.265.1